

ABSTRACT OF THE INVENTION

A conformal all-reflective beam-steering (CARBS) device is provided which is a hybrid of a mirror and one-axis gimbal assembly mounted on a rotating carriage. The CARBS device functions as a coarse-steering element in an electro-optical tracking system. The one-axis gimbal only has to steer over 0-45° elevation (El), rather than the more typical +/- 45° El. To provide a full field of regard (FOR), the present invention relies on a rotating carriage to rotate 360°. The present invention facilitates the full FOR by positioning a mirror and one-axis gimbal assembly close to the exit pupil window. Further, the present invention takes advantage of decentration and off-axis parabolic reflectors to maintain a small footprint. This compact design allows for lower system inertia, which reduces power draw, and further provides a system which may be package to meet upcoming military modular packaging requirements.